



ROYAL
ACADEMY OF
ENGINEERING



Diversity and Inclusion Progression Framework

Engineering and Science Professional Body

Benchmarking Report 2017



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Foreword

I am delighted that the Royal Academy of Engineering has partnered with the Science Council to develop a unique Progression Framework to increase diversity and inclusion across engineering and science. The framework has subsequently been used to deliver a benchmarking exercise, the results of which are presented in this report.

We have been working to increase diversity and inclusion across our profession for several years – initially with a focus on increasing the representation of women. However, as evidence of the importance of inclusion increases, we need to extend this focus to the inclusion of all groups for the benefit of both individual engineers and the profession as a whole.

There is now irrefutable evidence that diversity and inclusion support productivity, motivation, company bottom line, innovation and creativity. Our own research, informed by feedback from 7,000 engineers, reinforces this. Launched in September 2017, *Creating cultures where all engineers thrive* found that inclusion benefits the performance of individual engineers with 80% reporting increased motivation, 68% increased performance and 52% increased commitment to their organisation.

It also enhances organisational performance in that the more included engineers feel, the more likely they are to understand business priorities, be confident about speaking up on improvements, mistakes or safety concerns, and see a future for themselves in engineering.

This report highlights that the professional engineering community is making good progress in several areas including setting goals, building strategy and plans, integrating diversity and inclusion into communications and raising awareness of unconscious bias. However, there is more we can do to identify and formalise success measures, integrate diversity and inclusion into our core functions and activities, and extend the scope of our work beyond gender.

The professional engineering community has a key role to play in ensuring that the UK can benefit from what many are hailing as the fourth industrial Revolution.

It is in all our interests that we continue to drive progress on diversity and inclusion to support UK productivity, innovation and creativity, and I look forward to working with colleagues across the engineering and science communities to deliver further positive change in the years ahead.

Dr Hayaatun Sillem

Chief Executive, Royal Academy of Engineering



Foreword

It has been a unique experience for the Science Council to work very closely with the Royal Academy of Engineering to develop a framework, designed to make diversity and inclusion in the world of science and technology the default position rather than an add on, as it has been for so long.

What has really been so encouraging is that, in a very short time, this framework has been used to provide a benchmarking application that will help move diversity and inclusion on quicker and more efficiently in our sectors.

Society needs science and engineering to benefit from the brightest and best brains and the highest level of skill possible. We live in a challenging world where we must solve the problems of inequality and sustainability simultaneously and quickly. Science and engineering progress are an essential part of that. We cannot afford to waste our talent.

What was accepted in the past is still too often accepted, even to this day. The leaders in science who set the direction and create the rules by which science is governed overrepresent the academic, male, white and older part of the science workforce. Our society has changed, and become more diverse and that must be reflected in a modern-day science and technology workforce and its leadership.

From the work of Belbin on high-performance teams through to the present-day analysis of the effect of diversity on company profits, it is evident that decisions made by diverse teams are higher quality decisions.

Professional bodies have an important leadership role to play in recognising that they need to look at themselves, their boards, their staff teams and their members and consider how they can use their considerable influence to encourage more diverse steps to move towards a science workforce more truly aligned with our population today.

Professional bodies can set the tone to encourage science employers, science educators and young people themselves to choose a career in science and have confidence that, for example, their social class, gender, ethnic origins, disability or age will not limit their choices and chances in setting out on a science career.

This framework and benchmarking exercise will set us all on a path to improving the range of people working in science and engineering, and the Science Council warmly welcomes this as well as thanking all involved in this groundbreaking work.

It is our responsibility to make sure every child and young adult can see someone like them doing well in science. We start with ourselves.

As Marian Wright Edelman said *"You can't be what you can't see."*

Belinda Phipps

Chief Executive, Science Council



Section 1: Executive summary

This report presents combined key findings from the 2017 *Diversity and Inclusion Progression Framework* benchmarking exercise for professional engineering institutions (PEIs) and scientific bodies, and highlights similarities and differences in the submissions and feedback from the two sectors.

It provides a baseline against which to measure progress and gives insight into current good practice, challenges to progress, priorities and recommendations to drive change.

Separate reports on benchmarking findings from PEIs and scientific bodies are available from the Royal Academy of Engineering and Science Council websites.

By sector, participating organisations comprised:

- ▶ Twenty PEIs from a possible 35, including joint members (57% of eligible organisations).
- ▶ Twenty-one scientific bodies (Science Council members) from a possible 41, including joint members (51% of eligible organisations).

Six organisations are both PEI and Science Council members ('joint members').

1 Employment and membership

Both PEIs and scientific bodies vary considerably in workforce size, between fewer than 10 employees (some staffed entirely by volunteers) to over 100, with more larger PEIs (more than 100 employees) than scientific bodies.

- ▶ The majority of the institutions and scientific bodies have a workforce that is more than 50% female.
- ▶ Women are better represented on the boards, as chair of board committees, and in the membership of scientific bodies than of PEIs.
- ▶ Black Asian and minority ethnic (BAME) people are better represented on the boards of PEIs than of scientific bodies, but four PEIs and six scientific bodies have no BAME people on their boards, and the majority of both PEIs and scientific bodies have no BAME people in senior leadership.
- ▶ The majority of PEIs and scientific bodies were unable to provide any data on ethnicity in membership.

2 Self-assessment overview

The framework was launched in late 2016 by the Royal Academy of Engineering and the Science Council. It assesses progress on diversity and inclusion in eight areas of work across four progressive levels of good practice.

Participants were asked to self-assess their performance across the eight areas in the table opposite using the following four levels of good practice.

The four levels of good practice are:

- ▶ **Level 1: Initiating**
- ▶ **Level 2: Developing**
- ▶ **Level 3: Engaging**
- ▶ **Level 4: Evolving**

Further details, including descriptions and examples of each of the good practice levels, can be found at www.raeng.org.uk/publications/other/diversity-progression-framework

	Median self-assessment level for all participating organisations	Median self-assessment level for PEIs ¹	Median self-assessment level for scientific bodies ²
1.1 Governance and leadership	2	2	2
1.2 Membership and professional registration	2	2	2
1.3 Meetings, conferences and events	2	2	2
1.4 Education and training, accreditation and examinations	1	1	1
1.5 Prizes, awards and grants	1	1	1
1.6 Communications, marketing, outreach and engagement	2	2	2
1.7 Employment	2	2	2
1.8 Monitoring and measuring	2	2	2

There is a lot of similarity in the patterns of self-assessment by PEIs and scientific bodies.

- ▶ More PEIs than scientific bodies self-assess at **Level 3 (engaging)**, with 34 instances of PEIs self-assessing at **Level 3** across the eight sections, and 21 instances of scientific bodies.
- ▶ Governance and leadership was highlighted as an area of particular strength by PEIs and scientific bodies, with over 88.5% of institutions assessing themselves between **Levels 2 (developing)** and **Level 3 (engaging)**.
- ▶ Both PEIs and scientific bodies assess their performance to be weakest in education and training, accreditation and examinations (**Section 1.4**) with 14 PEIs and 15 scientific bodies, 83% of participating institutions, assessing themselves at **Level 1 (initiating)** in this section. This is a fundamental area of activity for engineering and science professional bodies with key roles to play in assessing and accrediting the knowledge, skills and experience of engineers from diverse backgrounds against professional standards.
- ▶ Across both PEIs and scientific bodies, prizes, awards and grants is the only section in which two professional bodies self-assessed themselves to be at **Level 4 (evolving)**. However, as can be seen from the above table, overall self assessment within and across engineering and science is at **Level 1**.

1 All PEI participants including those in joint Academy/Science Council membership

2 All scientific body participants including those in joint Academy/Science Council membership

3 Good practices, areas for development, future priorities and challenges

There is considerable alignment between the areas of good practice, areas for development, future priorities and challenges ahead for both PEIs and scientific bodies. Common themes include a focus on leadership on diversity and inclusion, monitoring and measuring, taking an inclusive approach to developing and delivering plans on diversity and inclusion, and creating a more inclusive working culture. Both PEIs and scientific bodies also share barriers to progress including lack of data, lack of resources (time, primarily) and the challenge of the demographic starting point, in terms of gender and ethnicity.

4 Recommendations

Recommendations to scientific bodies	Recommendations to PEIs
Both PEIs and scientific bodies should act to address diversity and inclusion in education and training, accreditation and exams; and in prizes awards and grants because both (particularly the former) are fundamental professional body activities.	
Expand monitoring activity to different demographic groups and areas of activity	Make it a priority to gather and track monitoring data on diversity and inclusion
Develop a strategy and action plan for diversity and inclusion	Clarify the bigger picture first (the overall objectives of the work on diversity and inclusion)
Engage with and involve members, staff and other stakeholders to drive diversity and inclusion	Take an inclusive approach to developing action plans on diversity and inclusion
Build diversity into a range of scientific body activities	Prioritise action on diversity and inclusion at board level
Broaden activity beyond gender and age	Broaden the scope of work to include aspects of diversity other than gender (in particular ethnicity), and inclusion more generally
Regularly communicate progress and plans on diversity and inclusion	

One final recommendation is to both the Royal Academy of Engineering and the Science Council, and concerns the opportunities for good practice and information exchange between PEIs and scientific bodies on diversity and inclusion for the future. With so many similarities in terms of good practices, challenges, priorities and plans, further and continued collaboration between the two organisations is strongly recommended.

Section 2: Introduction

This report shares the combined findings from the 2017 *Diversity and Inclusion Progression Framework* benchmarking exercise for PEIs and scientific bodies, and highlights similarities and differences in the submissions and feedback from the two sectors.

The framework was launched in late 2016, in a collaboration between the Royal Academy of Engineering and the Science Council. Further information about the development of the Progression Framework and the background to the benchmarking exercise is provided in **Appendix 1**.

Aside from this joint-sector report, participating professional bodies received a confidential individual report containing specific feedback on the performance of their own organisation. Sector-specific reports are available from the Royal Academy of Engineering (for PEIs) and the Science Council (for scientific bodies).

Section 3: Diversity in leadership and employment

3.1 Participation overview

Thirty-five organisations took part in the 2017 Progression Framework benchmarking exercise.

By sector, participating organisations comprised:

- ▶ Twenty PEIs from a possible 35, including joint members (57% of eligible organisations).
- ▶ Twenty-one scientific bodies (Science Council members) from a possible 41, including joint members (51% of eligible organisations).

Six organisations are both PEI and Science Council members ('joint members'). In this report, where the findings refer to PEIs this includes the six organisations that are joint PEI and Science Council members. Similarly, where findings refer to Science Council members, this includes the six organisations that are joint Science Council and PEI members.

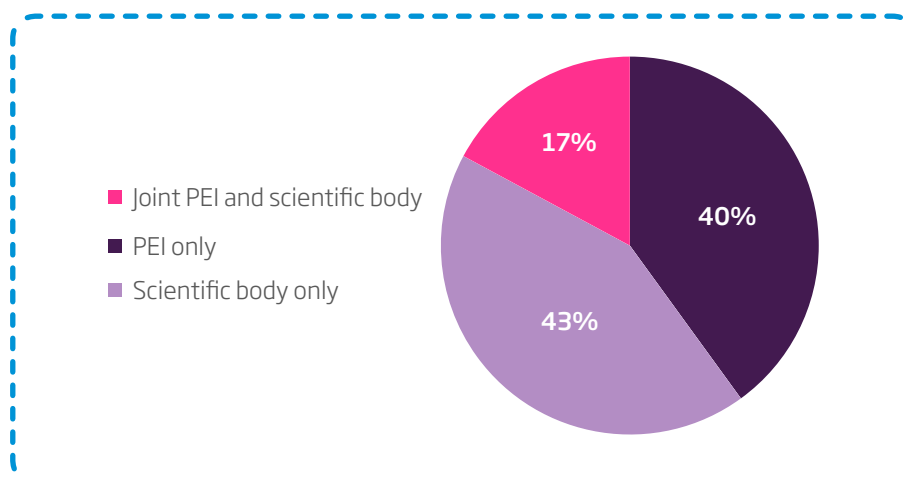


FIGURE 1: Participants in the 2017 benchmarking exercise by sector

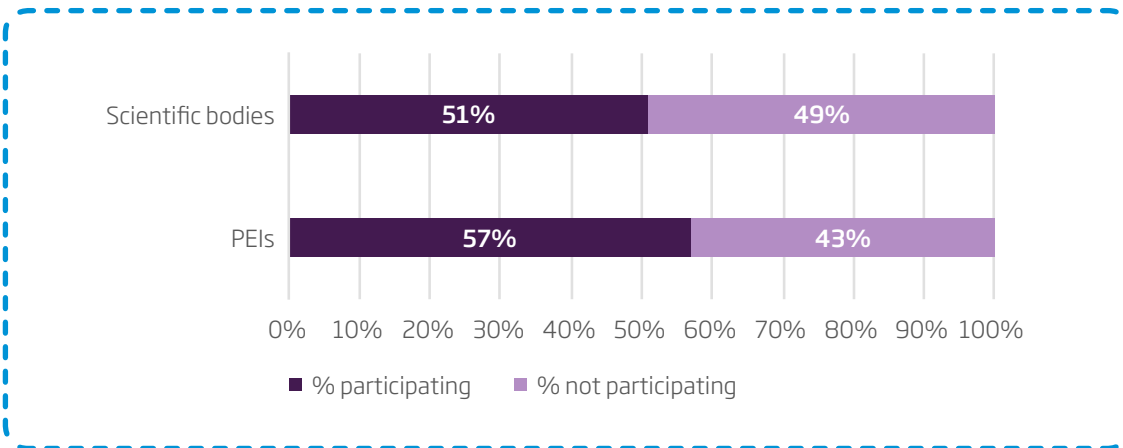


FIGURE 2: Participation rates in the 2017 benchmarking exercise by sector

3.2 Board diversity

Gender on boards

Nineteen PEIs and 21 scientific bodies provided data on the representation of women on their boards. Of those that provided data, nine PEIs and 17 scientific bodies have more than 30% women on their boards. Women are better represented on the boards of scientific bodies than of PEIs, reflecting the higher representation of women in the scientific workforce compared to engineering.

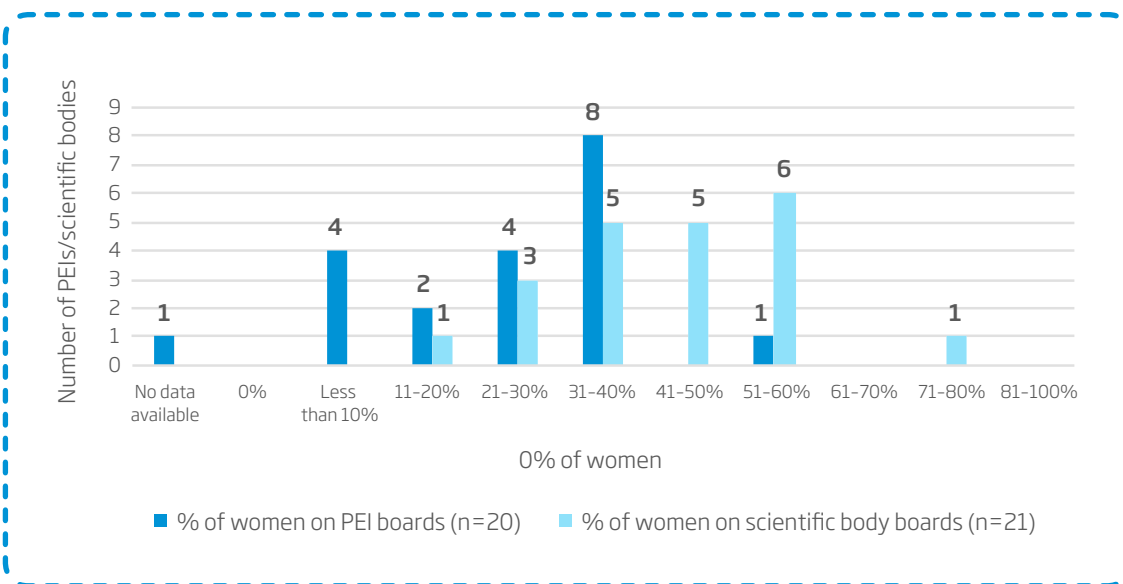


FIGURE 3: Women on boards

PEIs and scientific bodies were both less likely to provide data on the percentage of women chairing board committees than on women on the board overall. A higher percentage of board committees are chaired by women in scientific bodies, than in PEIs.

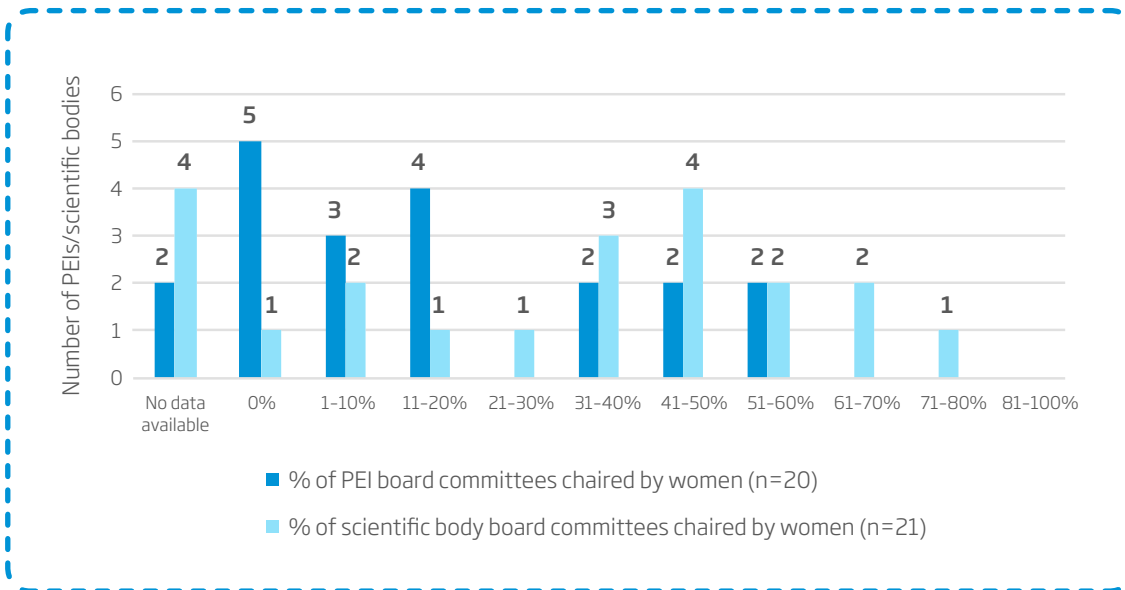


FIGURE 4: Women chairing board committees

Ethnicity on boards

Fifteen PEIs and 14 scientific bodies provided data on the representation of BAME people on their boards. BAME people are slightly better represented on the boards of PEIs than of scientific bodies, with five PEIs and three scientific bodies reporting more than 10% of BAME people on their boards. However, four PEIs and six scientific bodies (including joint members) report having no BAME people on their boards.

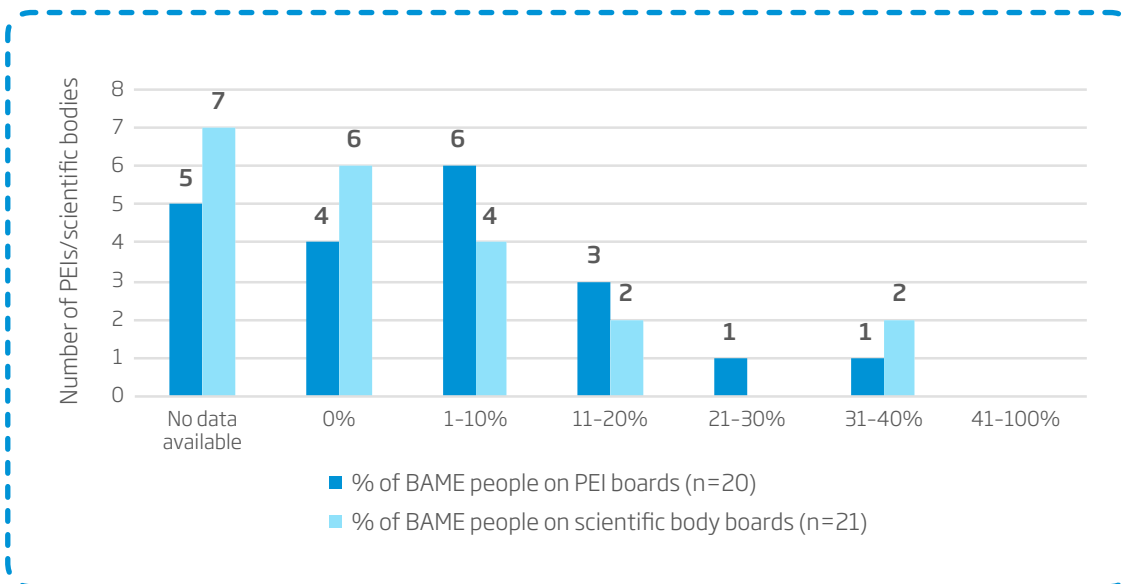


FIGURE 5: BAME people on boards

Ten PEIs and 12 scientific bodies report having no BAME chairs of board committees. Only two PEIs and one scientific body report having more than 11% of their board committees chaired by BAME people.

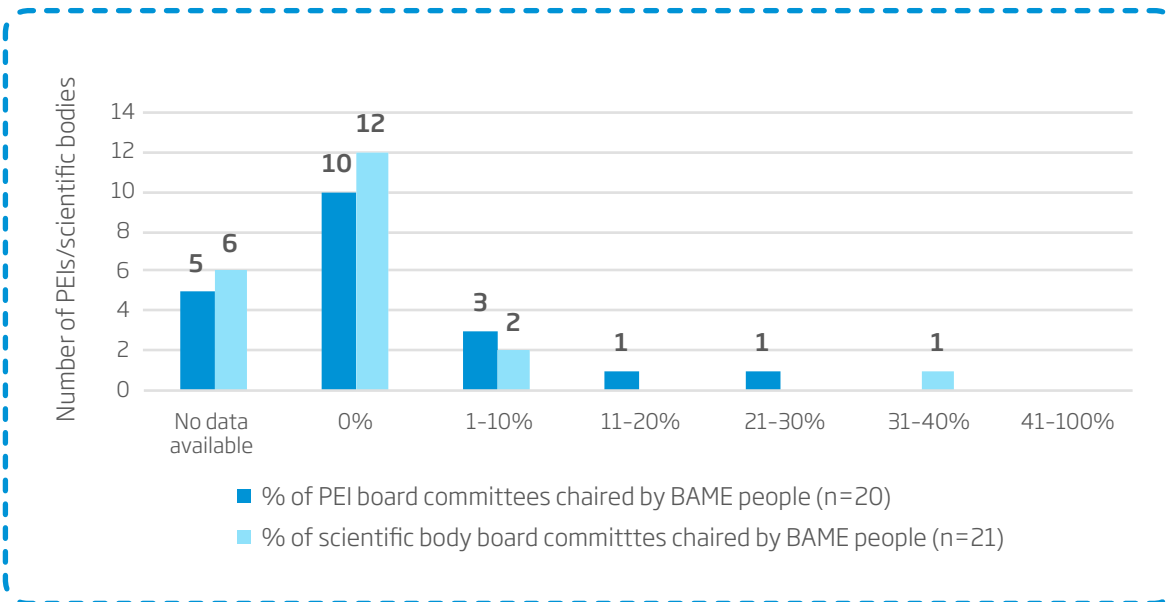


FIGURE 6: BAME people chairing board committees

3.3 Diversity in employment

All PEIs and all but one scientific body provided data on the number of employees in their workforces. Both PEIs and scientific bodies vary considerably in workforce size, between fewer than 10 employees to over 100, with more larger PEIs than scientific bodies.

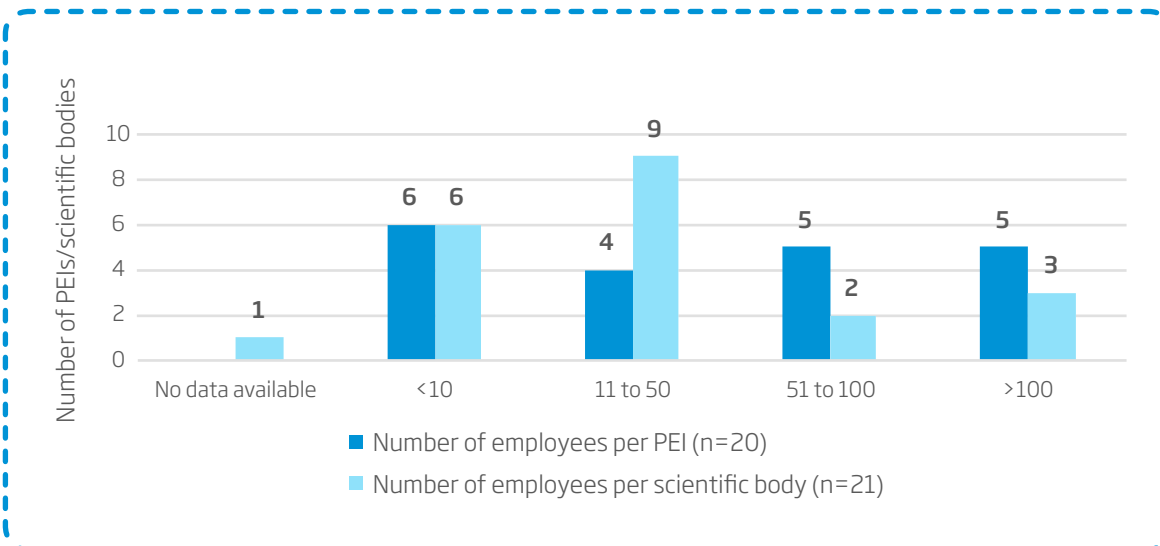


FIGURE 7: Number of employees

Note: Where UK and international staffing data were provided, UK data only is shown

Gender in employment

All PEIs and all but three scientific bodies provided data on the representation of women in the workforce. Eighteen PEIs and 17 scientific bodies have a workforce that is more than 50% female. One scientific body is staffed entirely by volunteers.

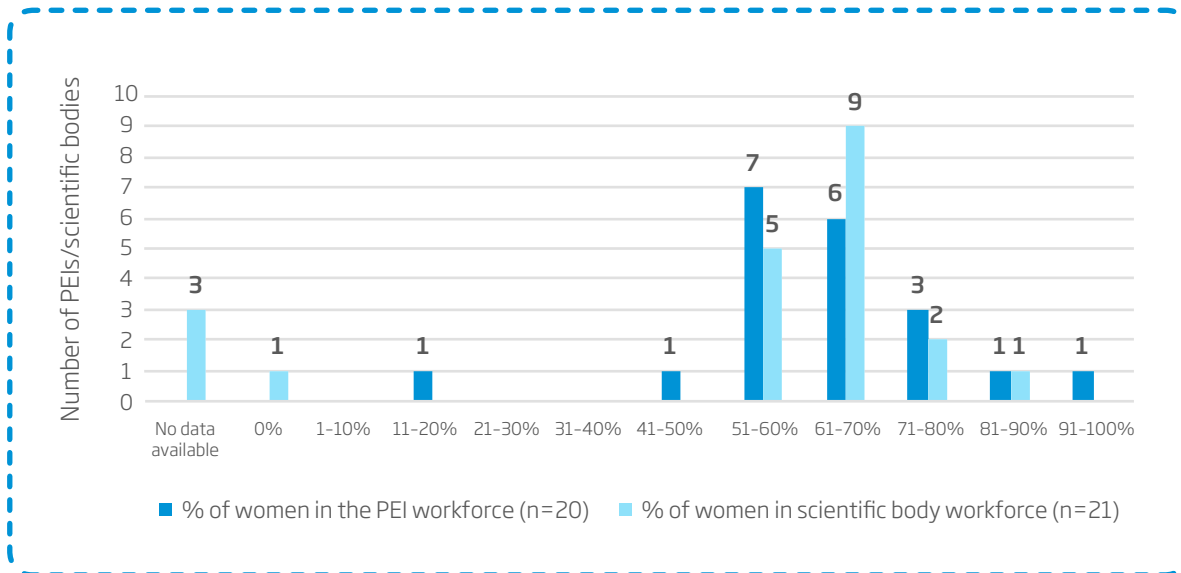


FIGURE 8: Women in employment

However, in both sectors, the representation of women decreases with seniority. Only five PEIs and six scientific bodies have a senior leadership that is more than 50% female.

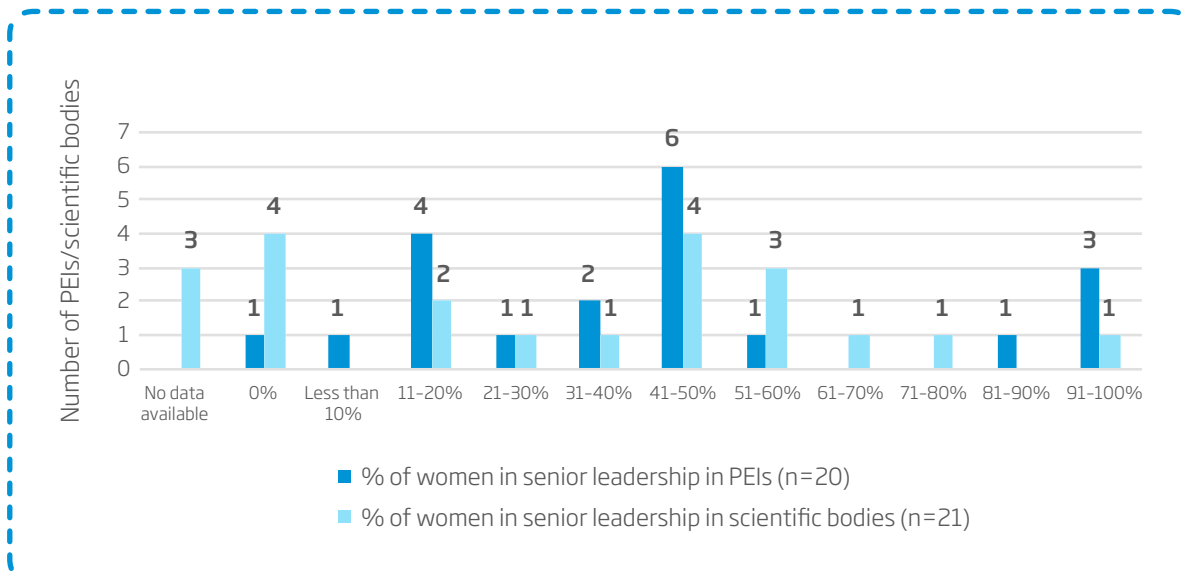


FIGURE 9: Women in senior leadership

Ethnicity in employment

Fewer PEIs and scientific bodies could provide data on the ethnicity of their workforce than on gender. Three PEIs and five scientific bodies were unable to do so. Four PEIs have no BAME employees, and 11 have more than 11% BAME people in the workforce. Three scientific bodies employ no BAME people, and eight employ more than 11% BAME people.

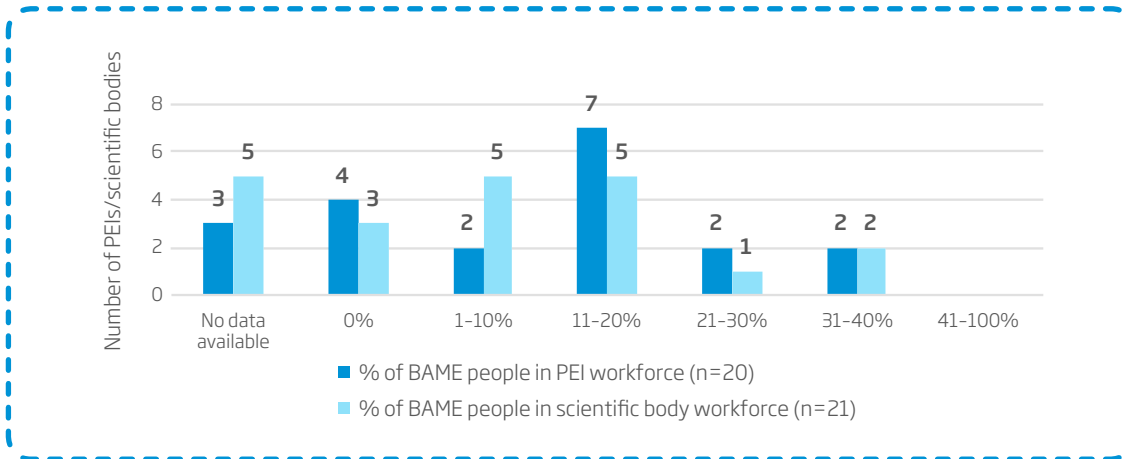


FIGURE 10: Ethnicity in employment

Twelve PEIs and 15 scientific bodies have no BAME people in senior leadership.

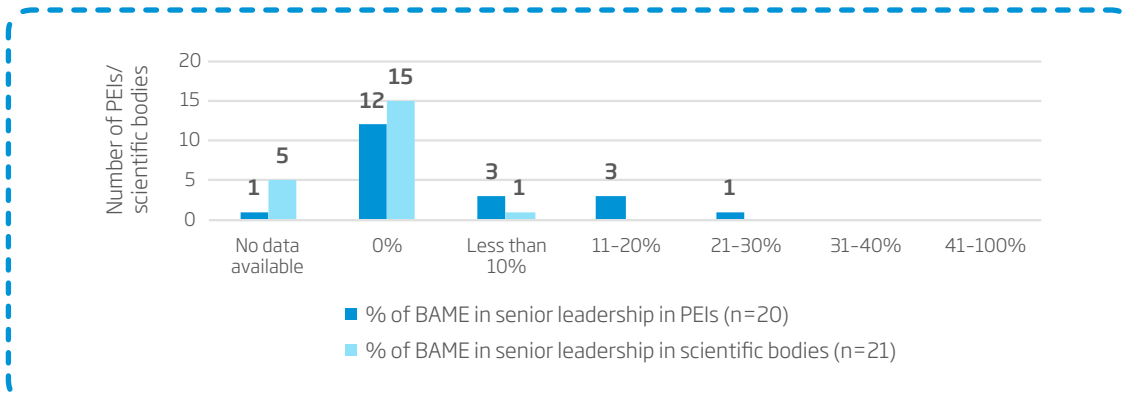


FIGURE 11: BAME people in senior leadership

Disability in employment

Sixteen PEIs and 15 scientific bodies provided data on disability in the workforce. Six PEIs and nine scientific bodies report having no employees with disabilities.

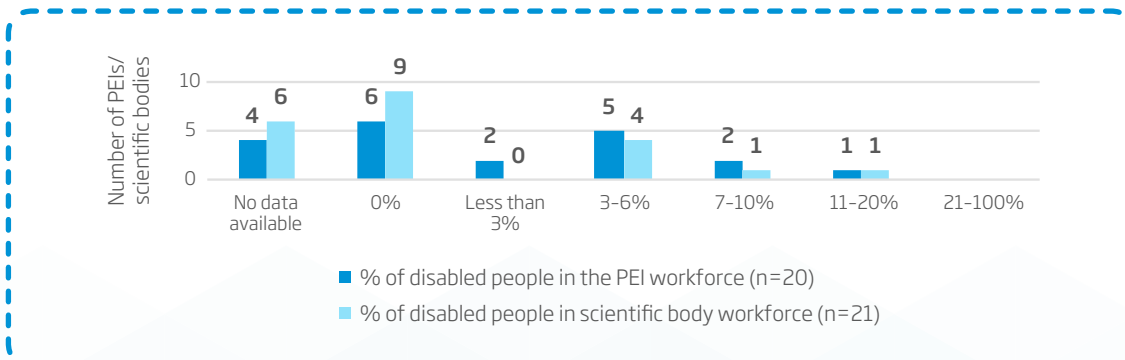


FIGURE 12: Disabled people in employment

Section 4: Diversity in membership

Seven PEIs and 10 scientific bodies have fewer than 5,000 members, but four PEIs and one scientific body have more than 50,000 members.

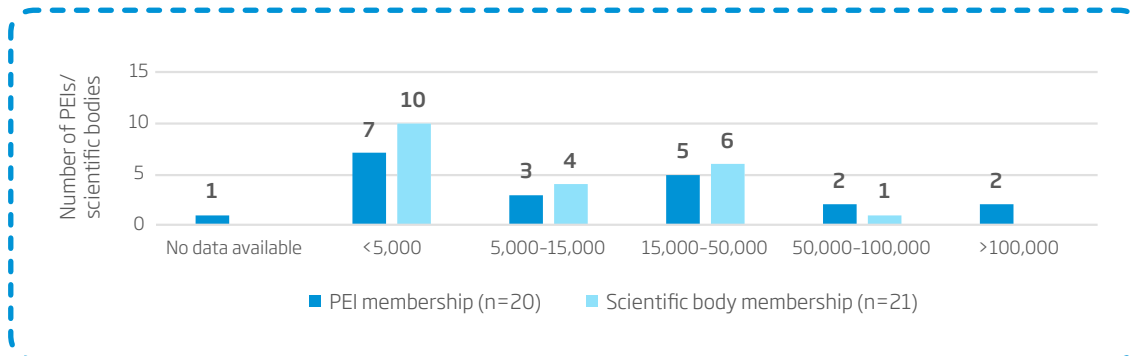


FIGURE 13: PEI and scientific body membership numbers

Gender in membership

On average women comprise 13% of PEI membership compared with 5.2% of the professional engineering register. However, in the two years to 2017, women made up an average 10.4% of new registrants annually indicating an increasing trend. On average, women comprise 34% of scientific bodies body members which is equivalent to the proportion in professional registration. Sixteen out of the 19 PEIs that provided data on gender have fewer than 20% women in their membership, compared to just four of the scientific bodies that provided data on gender.

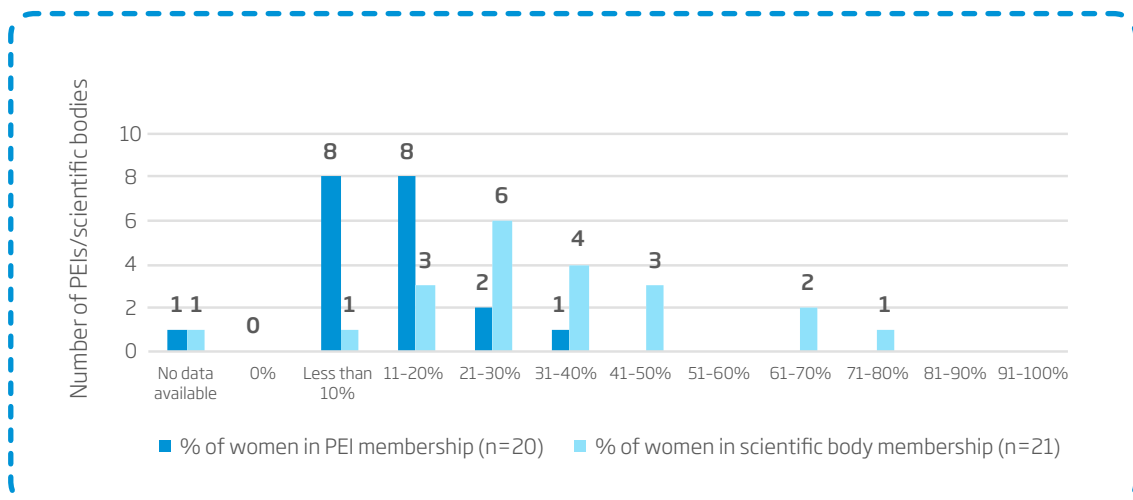


FIGURE 14: Women in membership

Ethnicity in membership

Only seven PEIs and seven scientific bodies could provide data on ethnicity in membership. Of these, three PEIs and two scientific bodies have less than 10% BAME members. Four PEIs and five scientific bodies report more than 10% BAME people in membership. Data on BAME people in professional engineering and science registration is not gathered at present.

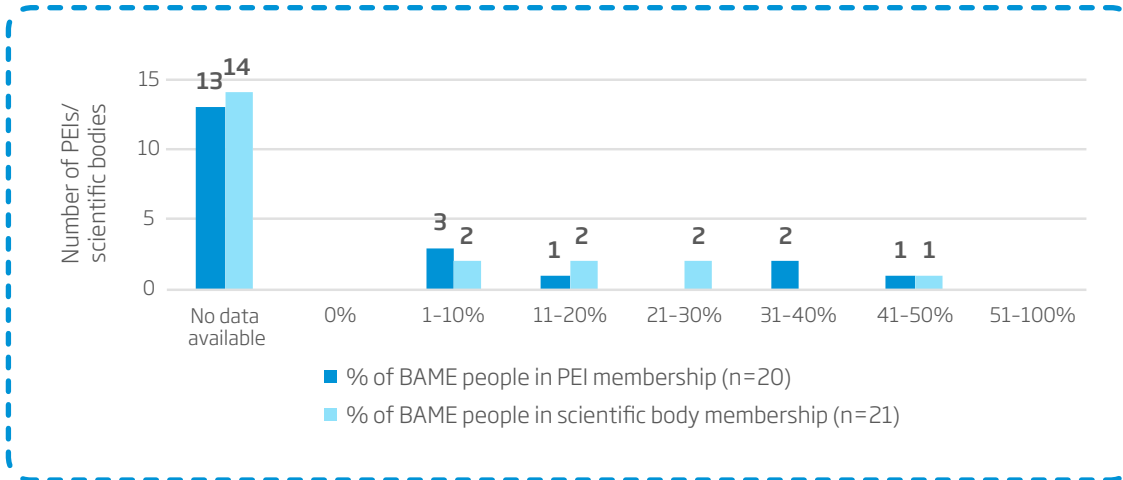


FIGURE 15: BAME people in membership

Disability in membership

Only six PEIs and seven scientific bodies provided any data on disability in membership. Five scientific bodies and five PEIs reported that less than 5% of their members have a disability. Data on disabled people in professional engineering and science registration is not gathered at present.

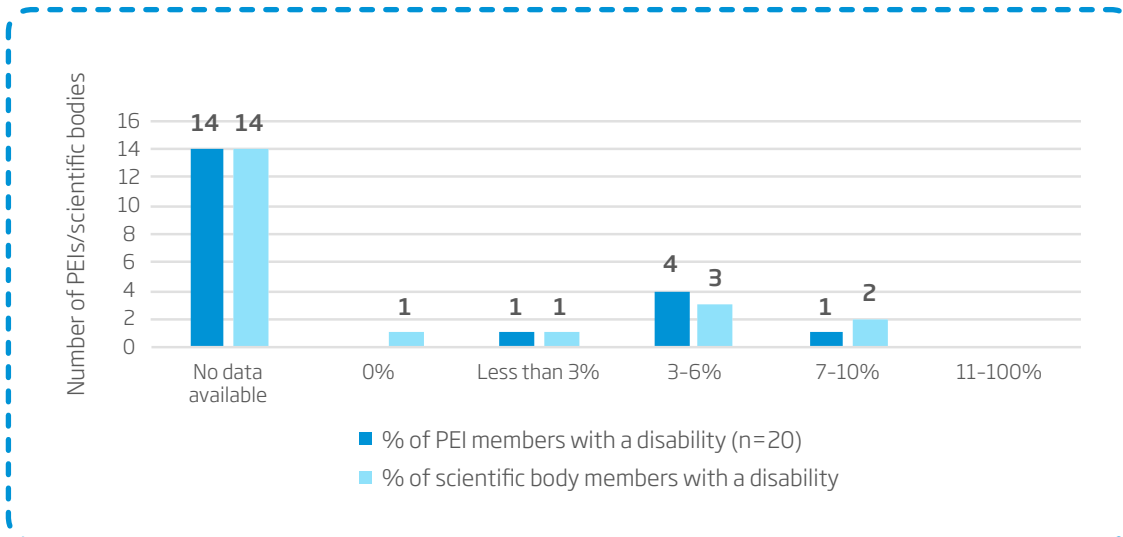


FIGURE 16: Disability in membership



Diversity in prizes, awards and grants

Between them, PEIs and scientific bodies awarded hundreds of prizes, awards and grants in the past 12 months. Only seven PEIs and five scientific bodies keep data on the ethnicity of prize and award winners. Only four PEIs and three scientific bodies recorded that they gave prizes, awards or grants to BAME people. Thirteen PEIs and 13 scientific bodies keep data on prize and award winners by gender. Six PEIs and nine scientific bodies gave more than 30% of prizes, awards and grants to women.

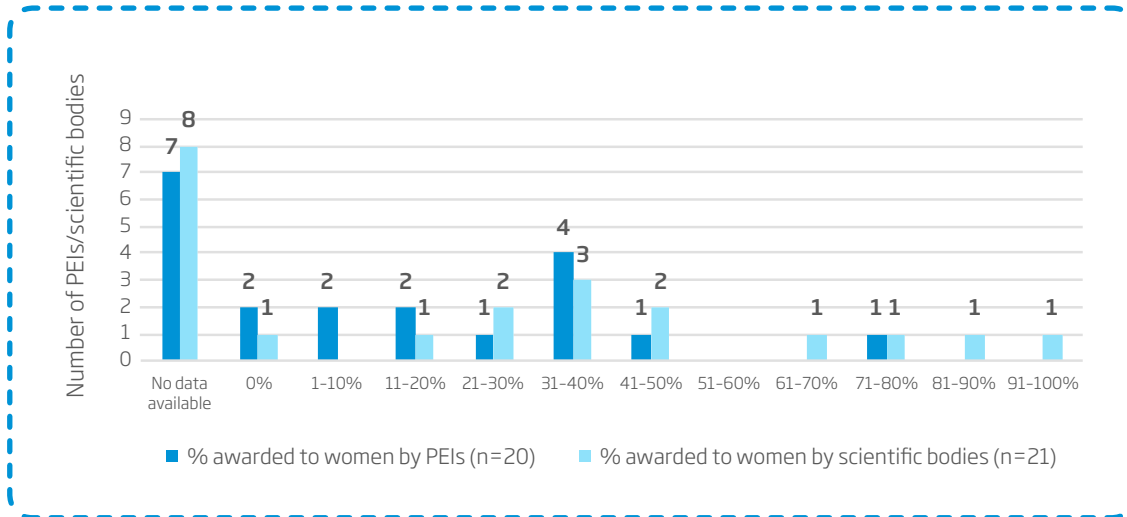


FIGURE 17: Prizes, awards and grants to women

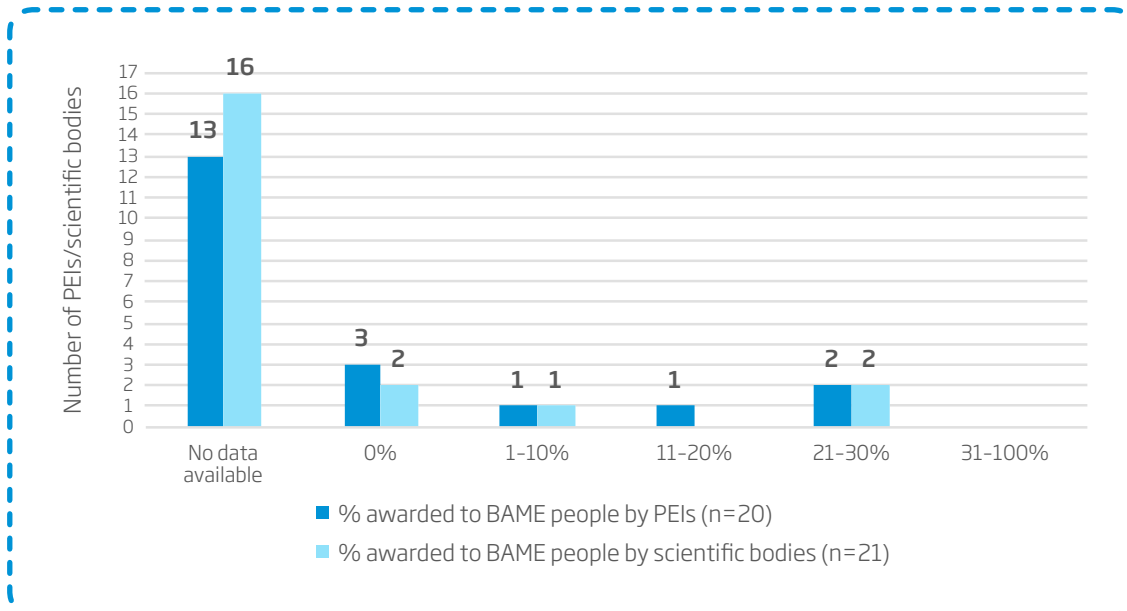


FIGURE 18: Prizes, awards and grants to BAME people

Section 5: Progression Framework results

In completing the framework for the 2017 benchmarking exercise, participants were asked to self-assess their progress in each of eight categories, by allocating a score on a simple Excel spreadsheet as follows: score 1 where progress is self-assessed to be at Level 1, score 2 where progress is self-assessed to be at Level 2 etc. The highest score is 4, where progress is self-assessed to be at Level 4. Participants were invited to score 0 if they were unable to record any activity at Levels 1 to 4.

The eight categories to which participants were asked to allocate a score, in line with the following levels of good practice, are listed in the table below.

The four levels of good practice are:

- ▶ **Level 1:** Initiating
- ▶ **Level 2:** Developing
- ▶ **Level 3:** Engaging
- ▶ **Level 4:** Evolving

The following table presents the median self-assessment scores for all participating organisations in the 2017 benchmarking exercise, overall and by sector.

	Median self-assessment level for all participating organisations	Median self-assessment level for PEIs ³	Median self-assessment level for scientific bodies ⁴
1.1 Governance and leadership	2	2	2
1.2 Membership and professional registration	2	2	2
1.3 Meetings, conferences and events	2	2	2
1.4 Education and training, accreditation and examinations	1	1	1
1.5 Prizes, awards and grants	1	1	1
1.6 Communications, marketing, outreach and engagement	2	2	2
1.7 Employment	2	2	2
1.8 Monitoring and measuring	2	2	2

- ▶ Overall there is no difference in the self-assessment of PEIs and scientific bodies in terms of progression on diversity and inclusion. In six of the eight categories of the framework, participants across both sectors assess their progress as **Level 2 (developing)**. In two of the eight categories of the framework, participants assess their progress as **Level 1 (initiating)**.

The graphs below present more detailed findings on the comparative self-assessment of PEIs and scientific bodies, for each of the eight categories of the framework.

³ All PEI participants including those in joint Academy/Science Council membership

⁴ All scientific body participants including those in joint Academy/Science Council membership



The key messages from the self-assessment by category are:

- ▶ As the table above indicates, there is a lot of similarity in the patterns of self-assessment by PEIs and scientific bodies.
- ▶ More PEIs than scientific bodies self-assess at **Level 3**, with 34 instances of PEIs self-assessing at **Level 3** across the eight sections, and 21 instances of scientific bodies.
- ▶ Governance and leadership was highlighted as an area of particular strength by PEIs and scientific bodies, with over 88.5% of institutions assessing themselves between **Level 2 (developing)** and **Level 3 (engaging)**.
- ▶ PEIs and scientific bodies both assess their performance to be weakest in education and training, accreditation and examinations (**Section 1.4**) with fourteen PEIs and fifteen scientific bodies, 83% of participating institutions, assessing themselves at **Level 1 (initiating)** in this section. This is a key area of activity for engineering and science professional bodies with a key role to play in assessing and accrediting the knowledge, skills and experience of engineers from diverse backgrounds against professional standards.
- ▶ Across both PEIs and scientific bodies, prizes, awards and grants (**Section 1.5**) is the only section in which participants self-assessed themselves to be at **Level 4 (evolving)** despite overall self-assessment at **Level 1**.

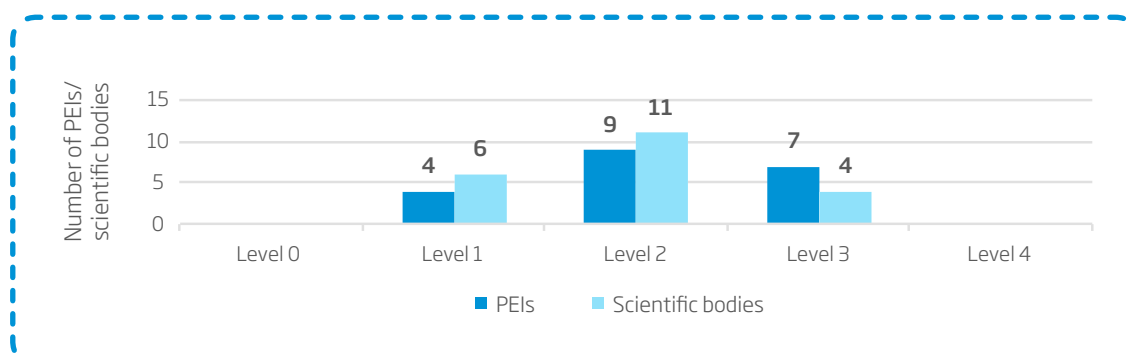


FIGURE 19: Section 1.1: Governance and leadership

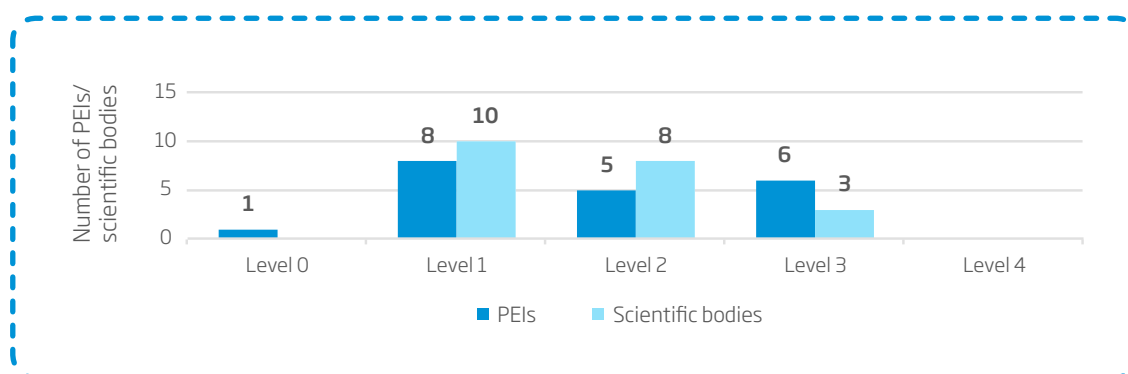


FIGURE 20: Section 1.2: Membership and professional registration

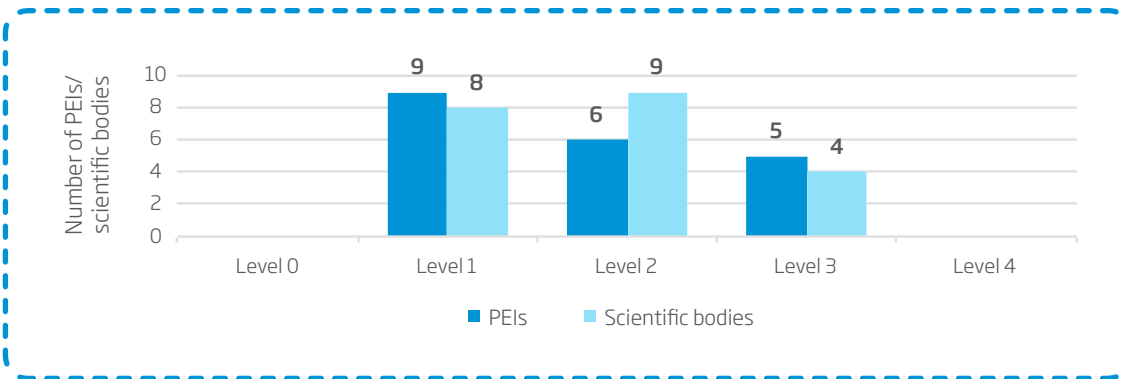


FIGURE 21: Section 1.3: Meetings, conferences and events

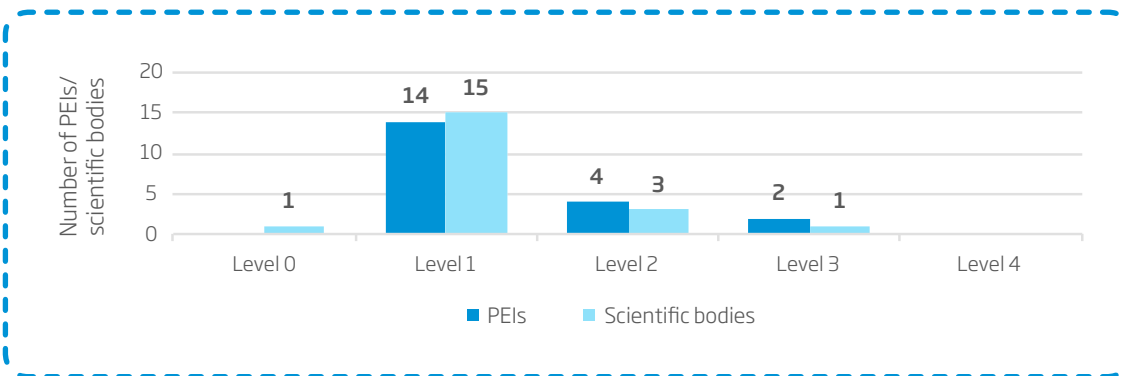


FIGURE 22: Section 1.4: Education and training, accreditation and examinations

Note: One scientific body did not complete this section

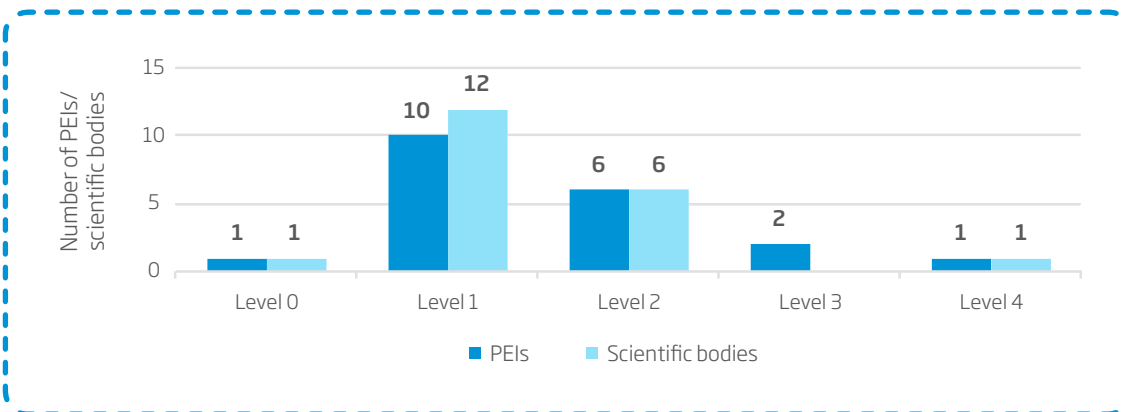


FIGURE 23: Section 1.5: Prizes, awards and grants

Note: One scientific body did not complete this section

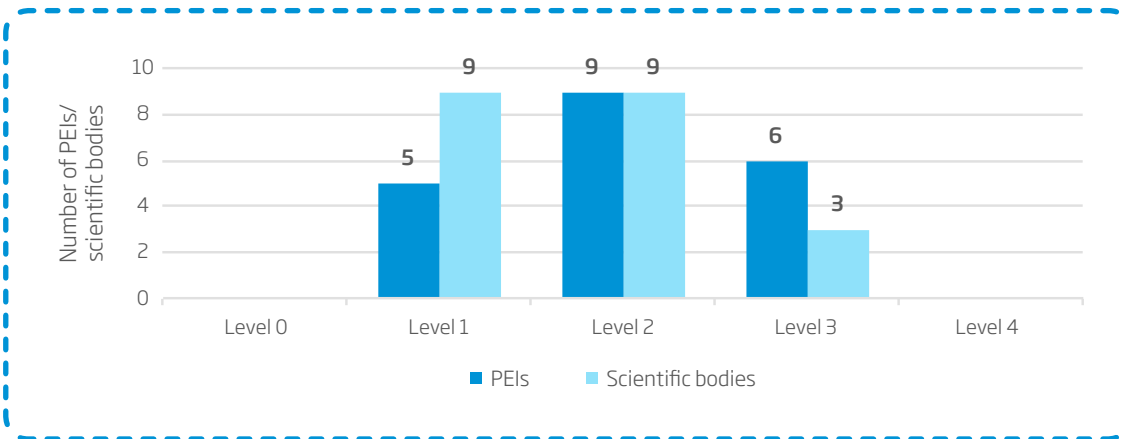


FIGURE 24: Section 1.6: Communications, marketing, outreach and engagement

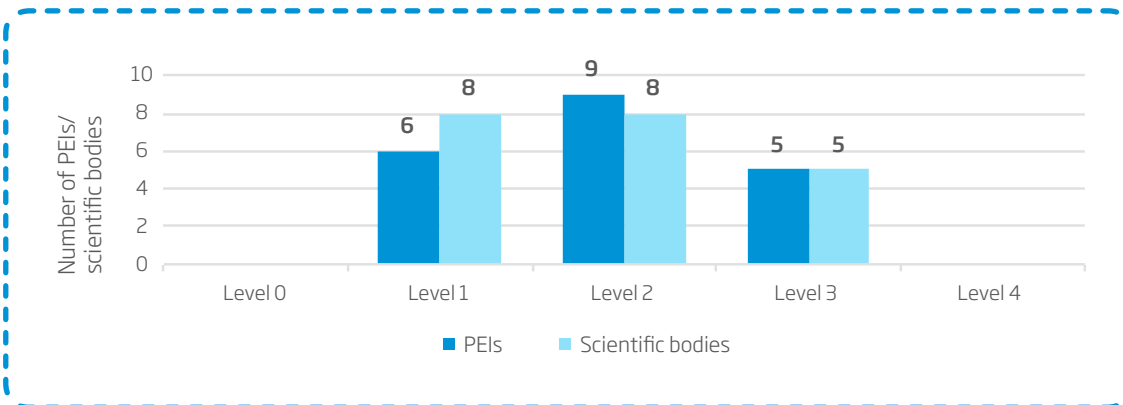


FIGURE 25: Section 1.7: Employment

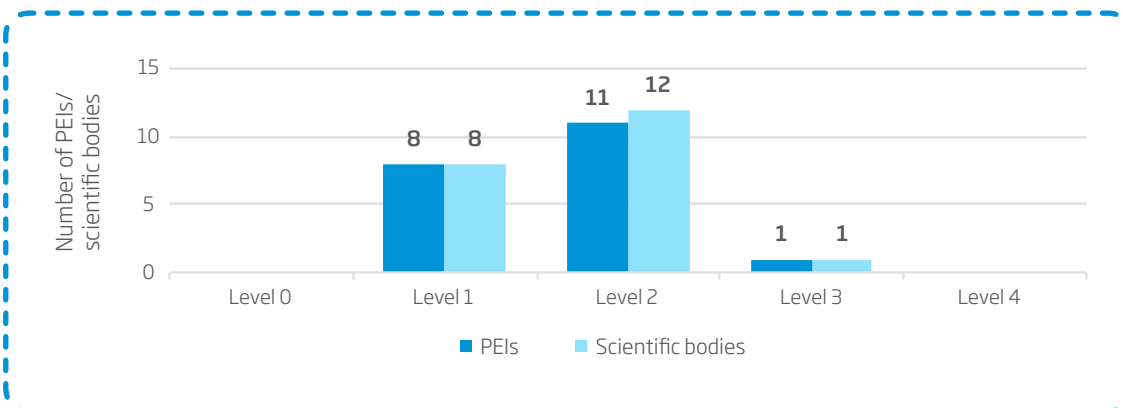


FIGURE 26: Section 1.8: Monitoring and measuring

Section 6: Good practices, areas for development, future priorities and challenges

This section summarises comparative qualitative findings from the submissions of PEIs and scientific bodies, in relation to good practices, areas for development, future priorities and challenges in making progress on diversity and inclusion. For detailed examples of good practice, development areas, future priorities and challenges from the individual submissions and feedback please see the sector-specific reports which can be found on the Royal Academy of Engineering and Science Council websites.

6.1 Good practices

Eight areas of good practice were identified across both PEIs and scientific bodies. There is considerable similarity across the two sectors, with organisations providing examples of good practice across all eight areas.

Scientific bodies	PEIs
Leading diversity and inclusion from the top	Leading diversity and inclusion from the top
Setting goals and building a strategy and action plan	Setting goals and building a strategy and action plan
Increasing diversity in membership	Increasing diversity in membership
Increasing diversity in leadership	Raising awareness of decision-makers about the impact of unconscious bias
Engaging with members and other stakeholders to inform approach	Engaging with members and other stakeholders to inform approach
Integrating diversity and inclusion into communications	Integrating diversity and inclusion into communications
Building a more diverse workforce	Integrating diversity and inclusion into how prizes are awarded
Creating a more inclusive working culture	Creating a more inclusive working culture

6.2 Areas for development

Five areas for development were identified in the sector-specific reports for PEIs and scientific bodies. Some of these areas for development are also areas of good practice - so for example a number of PEIs and scientific bodies shared examples of leadership on diversity and inclusion, but there is more that participants individually and overall want and need to do, to secure and sustain diversity and inclusion in leadership. However, given self-assessment low self-assessment scores against Education and training, accreditation and exams and Prizes, awards and grants, both PEIs and scientific bodies are advised to consider a review of the extent to which all groups have fair and equal access to these activities.

Scientific bodies	PEIs
Developing shared leadership and responsibility for diversity and inclusion	Increasing leadership diversity and engagement
Identifying and formalising success measures and action plans	Identifying and formalising objectives, success measures and action plans
Integrating diversity and inclusion into core functions and activities	Integrating diversity and inclusion into core PEI functions and activities
Monitoring and measuring	Monitoring and measuring
Extending the scope of diversity work beyond gender	Extending the scope of diversity work beyond gender

6.3 Future priorities

Both PEIs and scientific bodies identify similar priorities for their work on diversity and inclusion. Data monitoring, leadership, action planning, and the integration of diversity and inclusion into day-to-day activities look likely to dominate the diversity and inclusion activities of PEIs and scientific bodies for the year ahead.

Scientific bodies	PEIs
Improving collection and use of monitoring data	Data gathering and reporting
Putting strong foundations in place to support diversity and inclusion	Leadership and governance
Developing an action plan	Action planning and formalisation of approach
Consulting with members and staff	Diversity and inclusion in membership
Addressing unconscious bias	Awareness raising and behaviour change
Collaborating with stakeholders	Extending the scope of diversity and inclusion work
Taking specific diversity and inclusion initiatives	Review of guidance and assessment panels for awards
Improving accessibility	Making events available to all
Improving communications on diversity and inclusion	Improving communications on diversity and inclusion

6.4 Challenges to progress

Both PEIs and scientific bodies identified a number of challenges that act as risks to delivering on the priorities above. Lack of data, lack of time (resourcing) and the current demographics of the engineering and science sectors were identified as challenges to progress for both PEIs and scientific bodies. The challenge of building a proper understanding of diversity and inclusion was identified as a barrier by PEIs, but for scientific bodies the challenge is more about communicating the progress made. For PEIs, the culture of engineering is a challenge to progress; for scientific bodies, it is less about the culture (perhaps reflecting the higher representation of women in science compared to engineering) and more about how to encourage everyone in the organisation to take responsibility and ownership for progress.

Scientific bodies	PEIs
Lack of data	Lack of data
Internal resources	Internal resources
Current demographics	Current demographics
Shared responsibility	Organisational and professional culture
Communicating progress	Understanding of diversity and inclusion

Section 7: Conclusions and recommendations

7.1 Conclusions

More than half of PEIs and scientific bodies completed the 2017 Progression Framework. This sends a strong signal about the commitment of organisations in both sectors to making progress on diversity and inclusion, and to learning from each other about good practices as well as how to overcome challenges and gather ideas for future action.

When it comes areas of professional body work that would benefit most from a thorough diversity and inclusion review, the 2017 benchmarking exercise throws a spotlight on the two areas where self-assessment scores are lowest. These are education and training, accreditation and exams; and prizes, awards and grants – the former is core to professional body activity and the latter of relevance to many PEIs. PEIs should work together to address both areas by sharing good practice and if necessary, looking beyond the sector to find out what others are doing to ensure practice in both areas supports diversity and inclusion.

The 2017 benchmarking exercise reveals some differences between PEIs and scientific bodies in terms of diversity and inclusion, and many similarities. Women are better represented on the boards of scientific bodies, and as chairs of board committees, than in PEIs. BAME people are slightly better represented on the boards of PEIs than of scientific bodies, but there are both PEIs and scientific bodies that have no BAME people on their boards. Both PEIs and scientific bodies have predominantly female workforces, and in terms of membership, women are better represented in the membership of scientific bodies than in PEIs. However, neither PEIs nor scientific bodies were able to provide much data on ethnicity in membership, or on prizes, awards and grants to BAME people. It is clear that both sectors have focused much of their activity so far on increasing the representation and participation of women in science and engineering, and few are reporting concrete plans to extend the scope of their work on diversity and inclusion to other areas.

The overall self-assessment of PEIs and scientific bodies on the Progression Framework is also very similar, with both sectors assessing their progress as **Level 2 (developing)** in six of the eight categories, and as **Level 1 (initiating)** in two. More PEIs self-assess at **Level 3 (engaging)**, however, than scientific bodies, with notably more **Level 3** self-assessments from PEIs on activities related to governance and leadership, membership and professional registration, and communications and marketing.

7.2 Recommendations

The sector-specific reports each include recommendations for action for scientific bodies and PEIs in general. The recommendations below are drawn from those made to participating organisations, and emphasise themes that have most general relevance to the sector as a whole.

Once again, there is a lot of similarity in the recommendations for PEIs and scientific bodies. Both emphasise themes such as monitoring, action planning, and broadening the scope of work on diversity and inclusion beyond gender. Both also highlight the need for PEIs and scientific bodies to take an inclusive approach to developing and delivering on action plans on diversity and inclusion in the future, consulting with members, staff and other stakeholders to build real ownership and engagement.

Recommendations to scientific bodies	Recommendations to PEIs
Both PEIs and scientific bodies should act to address diversity and inclusion in education and training, accreditation and exams; and in prizes awards and grants because both (particularly the former) are fundamental professional body activities.	
Expand monitoring activity to different demographic groups and areas of activity	Make it a priority to gather and track monitoring data on diversity and inclusion
Develop a strategy and action plan for diversity and inclusion	Clarify the bigger picture first (the overall objectives of the work on diversity and inclusion)
Engage with and involve members, staff and other stakeholders to drive diversity and inclusion	Take an inclusive approach to developing action plans on diversity and inclusion
Build diversity into a range of scientific body activities	Prioritise action on diversity and inclusion at board level
Broaden activity beyond gender and age	Broaden the scope of work to include action on aspects of diversity other than gender (in particular ethnicity), and inclusion more generally
Regularly communicate progress and plans on diversity and inclusion	

One final recommendation is to both the Royal Academy of Engineering and the Science Council, and concerns the opportunities for good practice and information exchange between PEIs and scientific bodies on diversity and inclusion for the future. With so many similarities in terms of good practices, challenges, priorities and plans, further and continued collaboration between the two organisations is strongly recommended.

Appendix 1: Background to the Progression Framework

Over the last six years, the Royal Academy of Engineering (the Academy) has been leading a Diversity and Inclusion Programme aimed at delivering the vision of an inclusive engineering profession that inspires, attracts, recruits and retains people from all backgrounds. The programme is focused internally and externally, building partnerships and collaborations with stakeholders in engineering employment, professional bodies and third-sector organisations with the aim of challenging the status quo and driving change through effective and innovative interventions.

In 2012, the Academy worked with representatives from a number of PEIs to develop an Engineering Diversity Concordat (available at www.raeng.org.uk/policy/diversity-in-engineering/professional-engineering-institutions). This is a voluntary agreement to support joint working on diversity and inclusion.

All 38 (now 37) organisations representing UK professional engineering were invited to sign up to the concordat; as a result, 30 including the Engineering Council and the Academy have become signatories. The concordat commits signatories to work together to communicate commitment to diversity and inclusion, take action to promote and increase it, and monitor and measure progress.

Although PEIs subsequently reported progress against these objectives, there was appetite for increased rigour in planning, measuring progress and benchmarking. In addition, independent evaluation of the effectiveness of the concordat highlighted that there was some ambiguity around what 'success' looks like and that a standardised tracking tool or dashboard should be shared with institutions to monitor plans and encourage increased commitment and ongoing progress. This resulted in the birth of the *Diversity and Inclusion Progression Framework* - developed for professional bodies by professional bodies in partnership with the Science Council.

In 2014, the Science Council developed a Declaration on Diversity, Equality and Inclusion to facilitate buy-in from its membership of professional bodies in the promotion of equality, diversity and inclusion (EDI). The aim is to create greater opportunity for all individuals to fulfil their scientific potential, irrespective of background or circumstances.

The Science Council sets the standards for professional scientists through registration. It also helps science to better serve society by attracting the widest possible talent to the science workforce and fostering a greater diversity of scientific ideas, research and technology.

The Science Council is committed to widening participation in science education and the workplace. To this end, the Science Council and its member bodies have declared a commitment to promote EDI throughout their communities and challenge prejudice and discrimination.

As a leading voice in science and the application of science, the Science Council seeks every opportunity to be proactive in promoting and communicating this vision to educators, employers, policymakers, opinion formers and other publics.

Appendix 2: Benchmarking methodology

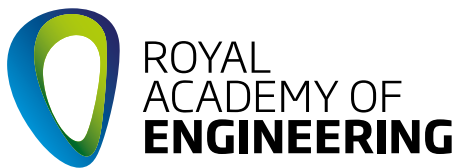
In completing the Framework for the 2017 Progression Framework benchmarking exercise, participants were asked to self-assess their progress in each of the eight categories above, by allocating a score on a simple Excel spreadsheet as follows: score 1 where progress is self-assessed to be at Level 1, score 2 where progress is self-assessed to be at Level 2 etc. They were also asked to respond to a number of qualitative and measurement questions regarding progress on diversity and inclusion in their organisations.

Completed Frameworks were returned to for business sake consulting limited (www.forbusinessake.com), independent consultants on diversity, inclusion and organisational change. The consultants were commissioned by the Royal Academy of Engineering and the Science Council to conduct the benchmarking analysis and signed a non-disclosure agreement, which meant only the participating organisation and the consultant saw each individual engineering and science professional body submission.

Once received, the submissions for all participating organisations were combined by the consultants in a single Excel spreadsheet, including both self-assessment and text evidence. This allowed the consultants to calculate numerical benchmarks and to compare self-assessment levels and qualitative evidence from participating organisations, overall and by sector (PEI and scientific body).

The individual feedback reports to participating organisations included three benchmarks:

- ▶ **Benchmark 1:** How the organisation's self-assessment benchmarked against the self-assessment of all other participating organisations (PEIs and scientific bodies combined).
- ▶ **Benchmark 2:** How the self-assessment benchmarked against the self-assessment of other participating organisations in the same sector (PEIs or scientific bodies).
- ▶ **Benchmark 3:** How the data provided on women and on BAME people on the board, and in membership, benchmarked against the data provided by all other participating organisations.



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